

READ INSTRUCTIONS CAREFULLY  
BEFORE PROCEEDING

APR 15 2019  
**US BANK/FCC**  
FEDERAL COMMUNICATIONS COMMISSION  
**REMITTANCE ADVICE**  
FORM 159

Approved by OMB  
3060-0589  
Page No. 1 of 2

190413 9089951001

(1) LOCKBOX # <b>979089</b>		SPECIAL USE ONLY	
		FCC USE ONLY	
<b>SECTION A - PAYER INFORMATION</b>			
(2) PAYER NAME (if paying by credit card enter name exactly as it appears on the card) <b>Bristol Broadcasting Company, Inc.</b>		(3) TOTAL AMOUNT PAID (U.S. Dollars and cents) <b>\$725.00</b>	
(4) STREET ADDRESS LINE NO. 1 <b>901 East Valley Drive</b>			
(5) STREET ADDRESS LINE NO. 2			
(6) CITY <b>Bristol</b>		(7) STATE <b>VA</b>	(8) ZIP CODE <b>24201</b>
(9) DAYTIME TELEPHONE NUMBER (include area code) <b>276-669-8112</b>		(10) COUNTRY CODE (if not in U.S.A.) <b>USA</b>	
<b>FCC REGISTRATION NUMBER (FRN) REQUIRED</b>			
(11) PAYER (FRN) <b>0002071504</b>		(12) FCC USE ONLY	
<b>IF MORE THAN ONE APPLICANT, USE CONTINUATION SHEETS (FORM 159-C)</b>			
<b>COMPLETE SECTION BELOW FOR EACH SERVICE. IF MORE BOXES ARE NEEDED, USE CONTINUATION SHEET</b>			
(13) APPLICANT NAME <b>Bristol Broadcasting Company, Inc.</b>			
(14) STREET ADDRESS LINE NO. 1 <b>901 East Valley Drive</b>			
(15) STREET ADDRESS LINE NO. 2			
(16) CITY <b>Bristol</b>		(17) STATE <b>VA</b>	(18) ZIP CODE <b>24201</b>
(19) DAYTIME TELEPHONE NUMBER (include area code) <b>276-669-8112</b>		(20) COUNTRY CODE (if not in U.S.A.) <b>USA</b>	
<b>FCC REGISTRATION NUMBER (FRN) REQUIRED</b>			
(21) APPLICANT (FRN) <b>0002071504</b>		(22) FCC USE ONLY	
<b>COMPLETE SECTION C FOR EACH SERVICE, IF MORE BOXES ARE NEEDED, USE CONTINUATION SHEET</b>			
(23A) CALL SIGN/OTHER ID <b>WSNQ(AM)</b>	(24A) PAYMENT TYPE CODE <b>MMR</b>	(25A) QUANTITY <b>1</b>	
(26A) FEE DUE FOR (PTC) <b>\$725.00</b>	(27A) TOTAL FEE <b>\$725.00</b>	FCC USE ONLY	
(28A) FCC CODE 1		(29A) FCC CODE 2	
(23B) CALL SIGN/OTHER ID	(24B) PAYMENT TYPE CODE	(25B) QUANTITY	
(26B) FEE DUE FOR (PTC)	(27B) TOTAL FEE	FCC USE ONLY	
(28B) FCC CODE 1		(29B) FCC CODE 2	
<b>SECTION D - CERTIFICATION</b>			
<b>CERTIFICATION STATEMENT</b> I, <u>Roger B. Baxton</u> , certify under penalty of perjury that the foregoing and supporting information is true and correct to the best of my knowledge, information and belief.			
SIGNATURE <u>Roger B. Baxton</u>		DATE <u>4-5-19</u>	
<b>SECTION E - CREDIT CARD PAYMENT INFORMATION</b>			
MASTERCARD _____ VISA _____ AMEX _____ DISCOVER _____			
ACCOUNT NUMBER _____		EXPIRATION DATE _____	
I hereby authorize the FCC to charge my credit card for the service(s)/authorization herein described.			
SIGNATURE _____		DATE _____	

APR 02 2019  
US BANK/FCC

FOR  
FCC  
USE  
ONLY

**FCC 302-AM**  
**APPLICATION FOR AM**  
**BROADCAST STATION LICENSE**

(Please read instructions before filling out form.)

FOR COMMISSION USE ONLY

FILE NO. **BL-20190415ABI**

**SECTION I - APPLICANT FEE INFORMATION**

1. PAYOR NAME (Last, First, Middle Initial)

**Bristol Broadcasting Company, Inc.**

MAILING ADDRESS (Line 1) (Maximum 35 characters)

**901 East Valley Drive**

MAILING ADDRESS (Line 2) (Maximum 35 characters)

CITY

**Bristol**

STATE OR COUNTRY (if foreign address)

**VA**

ZIP CODE

**24201**

TELEPHONE NUMBER (include area code)

**276-669-8112**

CALL LETTERS

**WSNQ(AM)**

OTHER FCC IDENTIFIER (if applicable)

**FCC Facility ID # 19478**

2. A. Is a fee submitted with this application?

☒ Yes ☐ No

B. If No, indicate reason for fee exemption (see 47 C.F.R. Section

☐

Governmental Entity

☐

Noncommercial educational licensee

☐

Other (Please explain):

C. If Yes, provide the following information:

Enter in Column (A) the correct Fee Type Code for the service you are applying for. Fee Type Codes may be found in the "Mass Media Services Fee Filing Guide." Column (B) lists the Fee Multiple applicable for this application. Enter fee amount due in Column (C).

(A)

FEE TYPE CODE		
<b>M</b>	<b>M</b>	<b>R</b>

(B)

FEE MULTIPLE			
<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>

(C)

FEE DUE FOR FEE TYPE CODE IN COLUMN (A)
<b>\$ 725.00</b>

FOR FCC USE ONLY

To be used only when you are requesting concurrent actions which result in a requirement to list more than one Fee Type Code.

(A)

--	--	--

(B)

<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>
----------	----------	----------	----------

(C)

<b>\$</b>
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FOR FCC USE ONLY

ADD ALL AMOUNTS SHOWN IN COLUMN C, AND ENTER THE TOTAL HERE. THIS AMOUNT SHOULD EQUAL YOUR ENCLOSED REMITTANCE.

TOTAL AMOUNT REMITTED WITH THIS APPLICATION

**\$ 725.00**

FOR FCC USE ONLY

**0002071504**

2019 APR 25 PM 2:11

<b>SECTION II - APPLICANT INFORMATION</b>		
1. NAME OF APPLICANT Bristol Broadcasting Company, Inc.		
MAILING ADDRESS 901 East Valley Drive		
CITY Bristol	STATE VA	ZIP CODE 24201

2. This application is for:

- ☒ Commercial
 ☐ Noncommercial  
☐ AM Directional
 ☐ AM Non-Directional

Call letters WSNQ	Community of License Marion	Construction Permit File No. BP-20170525AMX	Modification of Construction Permit File No(s).	Expiration Date of Last Construction Permit 1/11/2021
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3. Is the station now operating pursuant to automatic program test authority in accordance with 47 C.F.R. Section 73.1620?

☒ Yes ☐ No

If No, explain in an Exhibit.

Exhibit No.

4. Have all the terms, conditions, and obligations set forth in the above described construction permit been fully met?

☒ Yes ☐ No

If No, state exceptions in an Exhibit.

Exhibit No.

5. Apart from the changes already reported, has any cause or circumstance arisen since the grant of the underlying construction permit which would result in any statement or representation contained in the construction permit application to be now incorrect?

☐ Yes ☒ No

If Yes, explain in an Exhibit.

Exhibit No.

6. Has the permittee filed its Ownership Report (FCC Form 323) or ownership certification in accordance with 47 C.F.R. Section 73.3615(b)?

☐ Yes ☐ No

☒ Does not apply

If No, explain in an Exhibit.

Exhibit No.

7. Has an adverse finding been made or an adverse final action been taken by any court or administrative body with respect to the applicant or parties to the application in a civil or criminal proceeding, brought under the provisions of any law relating to the following: any felony; mass media related antitrust or unfair competition; fraudulent statements to another governmental unit; or discrimination?

☐ Yes ☒ No

If the answer is Yes, attach as an Exhibit a full disclosure of the persons and matters involved, including an identification of the court or administrative body and the proceeding (by dates and file numbers), and the disposition of the litigation. Where the requisite information has been earlier disclosed in connection with another application or as required by 47 U.S.C. Section 1.65(c), the applicant need only provide: (i) an identification of that previous submission by reference to the file number in the case of an application, the call letters of the station regarding which the application or Section 1.65 information was filed, and the date of filing; and (ii) the disposition of the previously reported matter.

Exhibit No.

8. Does the applicant, or any party to the application, have a petition on file to migrate to the expanded band (1605-1705 kHz) or a permit or license either in the existing band or expanded band that is held in combination (pursuant to the 5 year holding period allowed) with the AM facility proposed to be modified herein?

☐ Yes ☒ No

If Yes, provide particulars as an Exhibit.

Exhibit No.

The APPLICANT hereby waives any claim to the use of any particular frequency or of the electromagnetic spectrum as against the regulatory power of the United States because use of the same, whether by license or otherwise, and requests and authorization in accordance with this application. (See Section 304 of the Communications Act of 1934, as amended).


The APPLICANT acknowledges that all the statements made in this application and attached exhibits are considered material representations and that all the exhibits are a material part hereof and are incorporated herein as set out in full in

### CERTIFICATION

1. By checking Yes, the applicant certifies, that, in the case of an individual applicant, he or she is not subject to a denial of federal benefits that includes FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. Section 862, or, in the case of a non-individual applicant (e.g., corporation, partnership or other unincorporated association), no party to the application is subject to a denial of federal benefits that includes FCC benefits pursuant to that section. For the definition of a "party" for these purposes, see 47 C.F.R. Section 1.2002(b).

☒ Yes ☐ No

2. I certify that the statements in this application are true, complete, and correct to the best of my knowledge and belief, and are made in good faith.

Name <b>Roger Bouldin</b>	Signature 	
Title <b>Corporate Secretary/Director</b>	Date <b>12/15/2018</b>	Telephone Number <b>423-794-0857</b>

**WILLFUL FALSE STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT (U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION**

### FCC NOTICE TO INDIVIDUALS REQUIRED BY THE PRIVACY ACT AND THE PAPERWORK REDUCTION ACT

The solicitation of personal information requested in this application is authorized by the Communications Act of 1934, as amended. The Commission will use the information provided in this form to determine whether grant of the application is in the public interest. In reaching that determination, or for law enforcement purposes, it may become necessary to refer personal information contained in this form to another government agency. In addition, all information provided in this form will be available for public inspection. If information requested on the form is not provided, the application may be returned without action having been taken upon it or its processing may be delayed while a request is made to provide the missing information. Your response is required to obtain the requested authorization.

Public reporting burden for this collection of information is estimated to average 639 hours and 53 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, can be sent to the Federal Communications Commission, Records Management Branch, Paperwork Reduction Project (3060-0627), Washington, D. C. 20554. Do NOT send completed forms to this address.

THE FOREGOING NOTICE IS REQUIRED BY THE PRIVACY ACT OF 1974, P.L. 93-579, DECEMBER 31, 1974, 5 U.S.C. 552a(e)(3), AND THE PAPERWORK REDUCTION ACT OF 1980, P.L. 96-511, DECEMBER 11, 1980, 44 U.S.C. 3507.



**SECTION III - LICENSE APPLICATION ENGINEERING DATA**

Name of Applicant

**Bristol Broadcasting Company, Inc.**

PURPOSE OF AUTHORIZATION APPLIED FOR: (check one)



Station License



Direct Measurement of Power

**1. Facilities authorized in construction permit**

Call Sign	File No. of Construction Permit (if applicable)	Frequency (kHz)	Hours of Operation	Power in kilowatts	
				Night	Day
<b>WSNQ</b>	<b>BP-20170525AMX</b>	<b>1330</b>	<b>Daytime</b>	<b>-0-</b>	<b>1.0</b>

**2. Station location**

State <b>Virginia</b>	City or Town <b>Marion</b>
--------------------------	-------------------------------

**3. Transmitter location**

State <b>VA</b>	County <b>Smyth</b>	City or Town <b>Marion</b>	Street address (or other identification) <b>1041 Radio Hill Road</b>
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**4. Main studio location**

State <b>VA</b>	County <b>Smyth</b>	City or Town <b>Marion</b>	Street address (or other identification) <b>1041 Radio Hill Road</b>
--------------------	------------------------	-------------------------------	--

**5. Remote control point location (specify only if authorized directional antenna)**

State	County	City or Town	Street address (or other identification)
-------	--------	--------------	---

6. Has type-approved stereo generating equipment been installed?



Yes



No

7. Does the sampling system meet the requirements of 47 C.F.R. Section 73.68?



Yes



No



Not Applicable

Attach as an Exhibit a detailed description of the sampling system as installed.

Exhibit No.

**8. Operating constants:**

RF common point or antenna current (in amperes) without modulation for night system <b>N.A.</b>		RF common point or antenna current (in amperes) without modulation for day system <b>2.45 amperes</b>	
Measured antenna or common point resistance (in ohms) at operating frequency Night <b>N.A.</b>	Day <b>166.2</b>	Measured antenna or common point reactance (in ohms) at operating frequency Night <b>N.A.</b>	Day <b>+j25.1</b>

**Antenna indications for directional operation**

Towers	Antenna monitor Phase reading(s) in degrees		Antenna monitor sample current ratio(s)		Antenna base currents	
	Night	Day	Night	Day	Night	Day

Manufacturer and type of antenna monitor:

## SECTION III - Page 2

9. Description of antenna system ((f directional antenna is used, the information requested below should be given for each element of the array. Use separate sheets if necessary.)

Type Radiator	Overall height in meters of radiator above base insulator, or above base, if grounded.	Overall height in meters above ground (without obstruction lighting)	Overall height in meters above ground (include obstruction lighting)	If antenna is either top loaded or sectionalized, describe fully in an Exhibit.
Self-Supporting Steel Tower	74.68	75.7	76.6	Exhibit No. N.A.

Excitation ☒ Series ☐ Shunt

Geographic coordinates to nearest second. For directional antenna give coordinates of center of array. For single vertical radiator give tower location.

North Latitude	36	°	51	'	22	"	West Longitude	81	°	30	'	18	"
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If not fully described above, attach as an Exhibit further details and dimensions including any other antenna mounted on tower and associated isolation circuits.

Exhibit No.  
Exhibit # 1

Also, if necessary for a complete description, attach as an Exhibit a sketch of the details and dimensions of ground system.

Exhibit No.


10. In what respect, if any, does the apparatus constructed differ from that described in the application for construction permit or in the permit?

Apparatus constructed as described in application for construction permit

11. Give reasons for the change in antenna or common point resistance.

New construction - New diplexer network installed

I certify that I represent the applicant in the capacity indicated below and that I have examined the foregoing statement of technical information and that it is true to the best of my knowledge and belief.

Name (Please Print or Type) Roger Bouldin	Signature (check appropriate box below) 
Address (include ZIP Code) 901 East Valley Drive Bristol, Virginia 24201	Date 12/15/2018
	Telephone No. (Include Area Code) 423-794-0857

☒ Technical Director

☐ Registered Professional Engineer

☐ Chief Operator

☐ Technical Consultant

☐ Other (specify)

Bristol Broadcasting Company APR 02 2019

977007

901 East Valley Dr

Bristol, VA 24203

FEDERAL COMMUNICATIONS COMMISSION  
Washington, DC 20554

Re: FRN 0002071504  
Call Sign/ID \_\_\_\_\_  
FCC Code #1 \_\_\_\_\_  
FCC Code #2 \_\_\_\_\_

Dear FCC Customer:

Re: Return of Unprocessable Application

This is to notify you that your application package is being returned for the following reasons:

- ( ) No application/filing accompanied your submission.
- ( ) No remittance accompanied your submission. Please refer to the appropriate Fee Filing Guide
- ( ) The remittance for payment type code \_\_\_\_\_ is now \$ \_\_\_\_\_.
- ( ) Your check is not acceptable for this reason \_\_\_\_\_.
- ( ) Multiple checks for a single application are not accepted, please send one check for \$ \_\_\_\_\_.
- ( ) No remittance advice (FCC Form 159) accompanied your submission.
- ( ) The payment type code is needed.
- ( ) The remittance advice form (FCC Form 159) is incomplete.
- ( ) The credit card section of FCC Form 159 Remittance Advice needs \_\_\_\_\_ Expiration date \_\_\_\_\_ Signature.
- ( ) Block 3 must be completed (please enter \$ \_\_\_\_\_) to authorize a credit charge, only the credit card holder can complete this item.
- ( ) Your credit card was denied by Authorizations; please confirm or correct card number.
- ( ) Your credit card was declined; if any question, please contact bank that issued card.
- ( ) The FCC Form 159, Remittance Advice, used is obsolete. Please use the July 2005 edition. See enclosed Public Notice for further information.
- ( ) The Payer/Applicant FCC Registration Number (FRN) is missing from the Form 159. This number is required in order to process your filing. See enclosed News Release for further assistance.
- ( ) Payment for your electronically filed application cannot be processed without the confirmation number in the FCC Code 2 block of the FCC Form 159. Payment must be received within 10 business days from the receipt date of your electronically filed application to avoid dismissal. If payment is not received within 10 days, you must file another electronically filed application, properly complete a FCC Form 159, which includes the required confirmation number, and send another payment.

~~Other.~~ FCC Form requires a handwritten signature for the Certification Statement  
Please sign and resubmit

Please refer to the enclosed Fee Filing Guide for further instructions, and mail your corrected application, remittance advice form and payment to the appropriate P.O. Box in St. Louis, MO.

If you have further questions, please contact the FCC at 202-418-1995.

Sincerely,  
FCC Financial Operations

Enclosures:

Filing Guide \_\_\_\_\_

Check/Credit Card(s) # \_\_\_\_\_ \$ \_\_\_\_\_

FCC Form(s) \_\_\_\_\_ Rec'd in P.O. Box # \_\_\_\_\_

The ATTACHED  
Form HAS  
Been Signed  
Thanks!

White - Applicant

Yellow - Bank

Pink - F. C. C.

Po Box 1389

Bristol, VA 24203

FEDERAL COMMUNICATIONS COMMISSION  
Washington, DC 20554

Re: FRN  
Call Sign/ID W5NCR  
FCC Code #1 \_\_\_\_\_  
FCC Code #2 \_\_\_\_\_

Dear FCC Customer,

Re: Return of Unprocessable Application

This is to notify you that your application package is being returned for the following reasons:

- ☐ No application/filing accompanied your submission.
- ☐ No remittance accompanied your submission. Please refer to the appropriate Fee Filing Guide
- ☐ The remittance for payment type code \_\_\_\_\_ is now \$ \_\_\_\_\_
- ☐ Your check is not acceptable for this reason \_\_\_\_\_
- ☐ Multiple checks for a single application are not accepted, please send one check for \$ \_\_\_\_\_
- ☒ No remittance advice (FCC Form 159) accompanied your submission.
- ☒ The payment type code is needed.
- ☐ The remittance advice form (FCC Form 159) is incomplete.
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- ☐ Block 3 must be completed (please enter \$ \_\_\_\_\_) to authorize a credit charge, only the credit card holder can complete this item.
- ☐ Your credit card was denied by Authorizations; please confirm or correct card number.
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- ☐ The FCC Form 159, Remittance Advice, used is obsolete. Please use the July 2005 edition. See enclosed Public Notice for further information.
- ☐ The Payer/Applicant FCC Registration Number (FRN) is missing from the Form 159. This number is required in order to process your filing. See enclosed News Release for further assistance.
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- ☐ Other.

Please refer to the enclosed Fee Filing Guide for further instructions, and mail your corrected application, remittance advice form and payment to the appropriate P.O. Box in St. Louis, MO.

If you have further questions, please contact the FCC at 202-418-1995.

Sincerely,

FCC Financial Operations

Enclosures:

Filing Guide \_\_\_\_\_

Check/Credit Card(s) # \_\_\_\_\_ \$ \_\_\_\_\_

FCC Form(s) \_\_\_\_\_ Rec'd in P.O. Box # \_\_\_\_\_

White - Applicant

Yellow - Bank

Pink - F. C. C.





Bristol  
Broadcasting  
Company

P. O. Box 1389 Bristol, Virginia 24203  
Phone (276)-669-8112 • Fax (276)-669-0541

December 22, 2019

Federal Communications Commission  
Media Bureau  
P. O. Box 979089  
St. Louis, MO 63197

Re: **WSNQ(AM) (Facility ID # 19478) at Marion, Virginia**  
*Licensee: Bristol Broadcasting Company, Inc.*  
Application for License – FCC Form 302-AM

Dear Ladies and Gentlemen:

Enclosed herewith are an original and three copies of an Application for AM Broadcast Station License (FCC Form 302) filed on behalf of Station WSNQ(AM) at Marion, Virginia.

Also enclosed is a check in the amount of \$725 to cover the requisite filing fee.

Finally, enclosed is a "Return Copy" of this filing to be date-stamped and returned in the accompanying stamped envelope.

Should you have any questions regarding this request, please contact me by email at [roger@wxbq.com](mailto:roger@wxbq.com) or via telephone at 423-794-0857.

Respectfully,

Roger Bouldin  
General Manager

Hasler

FIRST-CLASS MAIL

04/05/2019

US POSTAGE \$002.20



ZIP 24201

011E10673733

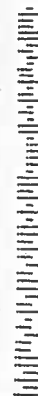


901 East Valley Drive • Bristol, Virginia 24203

Federal Communications Commission  
Media Bureau  
P. O. Box 979089  
St. Louis, MO 63197-9000

APR 15 2019

US BANK



**WSNQ(AM) at Marion, Virginia (Facility ID # 19478)**

*Licensee – Bristol Broadcasting Company, Inc.*

**Application for Station License**

**Exhibit 1**

Construction of the facilities authorized by Construction Permit # BP-20170525AMX has been completed. The apparatus constructed is in all regards in compliance with the facilities described in the Construction Permit.

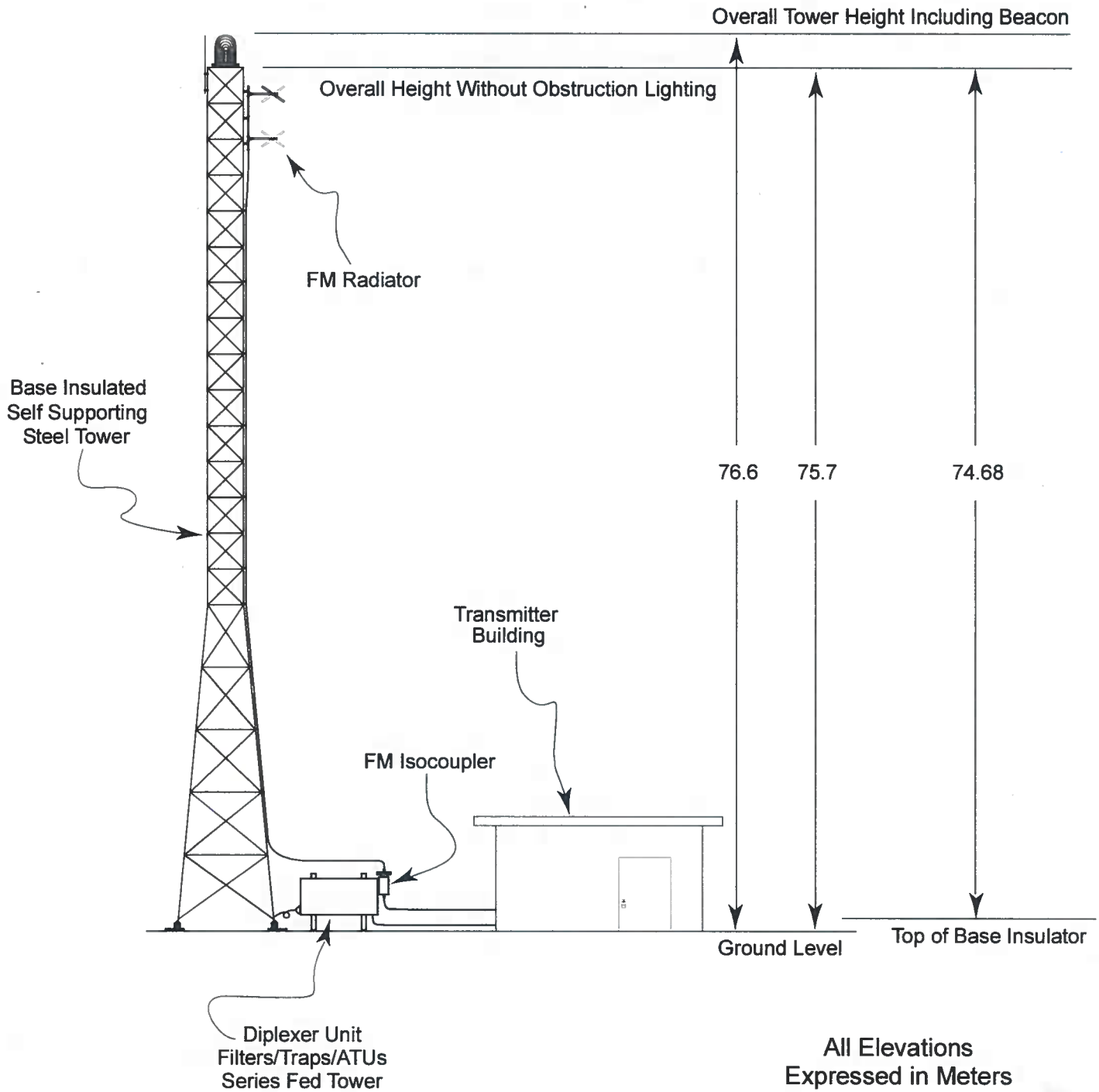
Attached hereto is an engineering report completed by Robert Elder, Senior Field Engineer with Compliance Matters, Inc., detailing measurements and tests completed to demonstrate the adequacy of filters, traps and other equipment that have been installed and adjusted to prevent interaction, intermodulation and/or generation of spurious radiation products which might have been caused by common usage of the same antenna system by Stations WSNQ and WUKZ (FCC Facility ID # 63710). Data is included from field observations showing that no spurious emissions exist and no objectionable problems have resulted from the use of the common antenna. Antenna resistance for was measured for each station (WSNQ and WUKZ) and is documented in the report.

An FCC Form 302 is also concurrently being filed notifying the Commission of the return to direct measurement of power by WUKZ.

Since both WSNQ and WUKZ are commonly owned, total responsibility for the installation and maintenance of all equipment and for the elimination of all spurious emissions and/or any objectionable problems shall be borne by Bristol Broadcasting Company, Inc.

Also attached hereto is a Profile Sketch of the Antenna Tower.

# Tower Profile Sketch



**BOULDIN  
ENGINEERING**

410 West Locust Street #1, Johnson City, TN 37604  
Telephone (423) 794-0857



**Engineering Report**

**WUKZ – 1010 kHz, 1.0 kW**  
**WSNO – 1330 kHz, 1.0 kW**

**Marion, VA**

**Report on**  
**Field Engineering Site Visit**  
**19 September 2018**

**Robert A. Elder**

**Sr. Field Engineer,**  
**Compliance Matters, Inc.**

**20 September 2018**

### Executive Summary

Radio station WSNQ – AM (1.0 kW, 1330 kHz - formerly WITM at 5.0 kW) was granted a Construction Permit in January of this year to be diplexed with WUKZ – AM (1.0 kW, 1010 kHz) at the existing WUKZ transmitter site. Following the design and installation of the appropriate antenna matching and filter networks, the resulting diplexing system was field tuned for the simultaneous operation of the two stations.

A sweep of impedance measurements was taken at the final output J-plug just before the tower feed for both carrier frequencies and their respective sidebands. For each station, an impedance measurement sweep was taken at the J-plug corresponding to the point of base current measurement. After final tuning of each matching network, the input impedance and SWR were measured at the respective carrier and sideband frequencies.

Based on the impedance measurements on the carrier frequencies for each station, the nominal full power current has been calculated, along with the +5% and -10% tolerance limit values.

Finally, the absence of spurious signals at the intermodulation product frequencies which could result from interactions between the two transmitting frequencies was verified through a series of signal strength measurements taken at a distance of 1.0 km from the antenna.

The data collected in the present report as described above are intended for use in supporting the required filing of the FCC 302-AM form to report the Direct Measurement of Power for each station.

### Data

Measurements of impedance were made with an HP 8753C Network Analyzer in conjunction with an ENI 350L RF Amplifier and Tunwall Radio directional coupler in a calibrated setup.

Tower Impedance measurements were made at the final output J-plug to the common tower feed. Measurements of the matching network output point were made at carrier and sideband frequencies. The respective measurements on the carrier frequencies are to be reported on the FCC 302-AM form. The final input match impedance sweep measurements were made at the respective input J-plugs at the ATU cabinet after tuning was complete.

#### A. WUKZ – 1.0 kW (daytime only)

<u>Freq. (kHz)</u>	<u>Tower Impedance</u>	<u>Output Impedance</u>	<u>Input Impedance</u>	<u>SWR</u>
995	23.2 – j8.4	40.0 – j1.3	47.2 + j6.6	1.160
1000	22.8 – j8.7	40.9 + j1.2	48.6 + j4.6	1.102
1005	22.4 – j9.0	42.0 + j3.6	49.6 + j2.3	1.049
<b>1010</b>	<b>21.7 – j9.3</b>	<b>43.1 + j6.0</b>	<b>50.0 – j0.1</b>	<b>1.002</b>
1015	20.7 – j9.6	44.1 + j8.6	49.8 – j2.6	1.054
1020	19.5 – j9.8	45.3 + j11.0	49.0 – j5.0	1.108
1025	18.1 – j9.8	46.5 + j13.5	47.8 – j7.2	1.166

#### Base Current Calculations

The licensed power level for WUKZ is 1,000 W for daytime operation, with no operation at night. The FCC allows operation within the range of 10% below to 5% above the nominal power level values.

<u>Operation</u>	<u>Level</u>	<u>Power (W)</u>	<u>Current (A)</u>
Daytime	- 10%	900	4.57
	Nominal	1,000	4.82
	+ 5%	1,050	4.94

For purposes of reporting Direct Measurement of Power to the FCC, the base impedance is **43.1 + j6.0** Ohms, and the nominal base current at full nominal power is 4.8 Amps for daytime operation.

## Measurement of Spurious Emissions at Intermodulation Product Frequencies

Measurements of signal strength were made at an unencumbered location (free of overhead wires or other interferences) at a distance of 1.02 km from the WUKZ/WSNQ tower. GPS coordinates of the measurement point are: N 36 50 49.37; W 081 30 16.02 (using Google Earth to identify measurement location). The signal strength measurements were taken with a Potomac Instruments FIM-41 meter, S/N 1952, last calibrated 13 June 2018.

The measurements of the unmodulated signal strength on the respective carrier frequencies are shown below, as are those at the intermodulation frequencies with both stations transmitting with full audio modulation. All measurements fell below the required limits of signal strength relative to the respective carrier signals, with the exception of other local stations whose audio broadcast signals were readily identified, as noted in the chart below.

### Field Strength Measurements at Intermodulation Product Frequencies and Calculated Strengths Relative to Carriers in dB

#### Stations:

	Call letters	Frequency	Unmod. Carrier reading (mV/m)
A	WUKZ	1010	250
B	WITM	1330	250

#### Date and Time of measurements:

Intermod Frequency	Origin	Reading	relative to 1010 (dB)	relative to 1330 (dB)
640	2B - 2A	0.5000 see note 1	-54.0	-54.0
690	2A - B	1.2000 see note 2	-46.4	-46.4
1650	2B - A	0.1200 see note 3	-66.4	-66.4
1700	3A - B	0.0010 see note 4	-108.0	-108.0
1970	3B - 2A	0.0010	-108.0	-108.0
2020	2A	0.0010	-108.0	-108.0
2340	A + B	0.0100	-88.0	-88.0
2660	2B	0.0120	-86.4	-86.4
2710	4A - B	0.0120	-86.4	-86.4
2980	3B - A	0.0010	-108.0	-108.0
3350	2A + B	0.0010	-108.0	-108.0
3670	A + 2B	0.0010	-108.0	-108.0
4310	4B - A	0.0010	-108.0	-108.0
4360	3A + B	0.0010	-108.0	-108.0
4680	2A + 2B	0.0010	-108.0	-108.0
5000	A + 3B	0.0010	-108.0	-108.0

Limit: -80 -80

#### NOTES:

- 1 WXSJ - AM is a local station (Blountville, TN) operating on 640 kHz
- 2 WZAP - AM is a local station (Bristol, VA) operating on 690 kHz
- 3 WBCN - AM is a translator station for 94.7 from Charlotte, NC, operating on 1660 kHz
- 4 For this and most of the remaining frequencies, there was no meter movement; the data for these show 1 microvolt/meter